

REMARKS

Upon entry of this reply, claims 4, 5, 9, 12, 14, 16, 17, 19 and 20 will be canceled without prejudice is disclaimer of the subject matter recited therein, and claims 1, 6 and 18 will be amended. Claims 1-3, 6-8, 10, 11, 13, 15 and 18 will remain pending.

Claim has been amended to include subject matter from dependent claims therein, and the claims have been amended to cancel certain dependent claims and to amend claims to avoid dependency upon canceled claims.

Reconsideration and allowance of the application are respectfully requested.

Statement of Interview

Applicants express appreciation for the courtesies extended by the Examiner to Applicants' representative Arnold Turk during a June 27, 2008 a telephone interview.

During the interview, the rejections of record in the Final Office Action were discussed with the arguments in Applicants' previously filed response being emphasized including that Howland does not appear to disclose the number of filaments per thread as being a parameter of concern. The Examiner did not appear to be persuaded by this argument as the Examiner appeared to consider that Howland would have a number of filaments per thread. The Examiner however indicated that allowable subject matter may be found if unexpected results can be established for the claimed subject matter.

Information Disclosure Statements

Applicants express appreciation for the inclusion with the Office Action of an initialed copy of the Form PTO-1449 so that the Examiner has confirmed consideration of the English abstract cited in the Other Documents portion of the form.

Response To Art Based Rejections

The following rejections are set forth in the Office Action.

(a) Claims 1-3, 7-10, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0074068 to Howland.

(b) Claims 1-3, 7, 9, 10, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,649,979 to Kazusa in view of US 2002/0074068 to Howland.

(c) Claims 4-6 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,649,979 to Kazusa in view of US 2002/0074068 to Howland, and further in view of JP 64-60402 to Miyamoto.

Applicants note that claim 1 is directed to a bicycle tire comprising:

a carcass;

a tread rubber;

one reinforcement layer in the tire, the one reinforcement layer containing strength supports comprising multifilament threads of more than 30 polyester/polyarylate filaments and having a fineness of 200 to 950 dtex, the filaments being spun from molten liquid-crystal polymer, arranged between the carcass and the tread rubber and/or between carcass layers below the tread rubber and/or within the tread rubber; and

the multifilament threads being present in the one reinforcement layer as threads running parallel to one another and not intersecting with a thread count of 130 to 480 threads per 10 cm.

Applicants respectfully submit that any combination of prior art utilized in the rejections of record does teach or suggest this claimed subject matter or the subject matter as further recited in the dependent claims. An advantage of the present invention is surprisingly a high resistance

to puncturing is obtained while having a low weight and thus a lower rolling resistance. See, for example, Applicants' specification at page 2, line 4-13. Therefore, not only is a *prima facie* case of obviousness not established, but Applicants' claimed subject matter provided unexpected advantages.

In the grounds of rejection set forth in the Final Office Action, the subject presently included in claim 1 was not rejected based upon the rejections (a) or (b) above. For example, claims 4 and 5 only rejected upon a combination of Kazusa in view of Howland further in view of Miyamoto. Accordingly, rejections (a) and (b) are no longer applicable and should be withdrawn.

The remaining rejection primarily contends that Howland discloses VECTRAN® which is asserted to be analogous to Applicants' recited polyester/polyarylate filaments. The rejection contends that one having ordinary skill in the art would have arrived at Applicants' recited at more than 30 filaments. Moreover, the rejection asserts that the features recited in Applicants' dependent claims, such as a diameter of less than 40 microns, would have been obvious based upon Kazusa in view of Howland and further in view of Miyamoto. The rejection does not point to documentary evidence with respect to features recited, for example, in claims 4 and 5, but makes naked assertions that such features would have been obvious depending upon intended use. **Therefore, as will be noted below, the Examiner is requested to specifically establish using documentary evidence that one having ordinary skill in the art would have modified Kazusa in view of Howland in view of Miyamoto to arrive at the combination of features recited in Applicants' claims.**

The Office Action notes that with respect to Howland that VECTRAN® is a non-preferred embodiment. However, the Office Action contends that a reference may be relied upon

for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments.

In response, Applicants once again submit that Howland is preferably directed, for reasons of low cost and low abrasion, to puncture-resistant layers comprising fibers having a tensile strength or tenacity of less than about 15 g/denier. For example, claim 1 of Howland is directed to "A tire anti-puncture device comprising: a puncture-resistant layer comprising at least two layers of woven fabric material, each layer having a taped fiber density of at least about 80% of full in at least one of the warp and fill and comprising fibers having a tenacity of less than about 15 g/denier, wherein the puncture-resistant layer is shaped and configured to form a belt within and around the periphery a tire".

Moreover, at paragraphs [0004] and [0005], Howland discloses that puncture-resistant layers or liners have also been utilized to provide puncture resistance to tires. Howland discloses that, for example, extruded or molded strips made of various resins, but containing no fibers therein, have been utilized as puncture-resistant layers. In addition, para-aramid felt strips made of felted fiber having a strength or tenacity of greater than 15 g/denier (gpd) have also been utilized. Howland discloses that other examples of puncture-resistant materials utilized in the prior art for providing puncture resistance to tires include VectranTM liquid crystal polyester and/or para-aramid coated fabrics made of fibers having a strength or tenacity of greater than 15 g/denier.

Howland discloses that the extruded or molded strips utilized in the prior art tend to have relatively poor puncture resistance, while the materials formed of high tenacity fibers (i.e., having a tenacity greater than 15 gpd), while providing good puncture resistance, tend to be expensive and can cause an undesirable level of abrasion, which can damage the tire cores and/or

inner tubes of the tire in which they are installed. Howland discloses that there is accordingly a need in the art for puncture-resistant materials and layers for use in tires having a desirable combination of good puncture resistance, relatively low cost, and a relatively low degree of abrasion, so as to prevent damage to the tire and/or inner tube in use.

Still further, at page 3, paragraph [0027], Howland discloses, referring to the construction of puncture-resistant layer 12, that a wide variety of fiber types can potentially be used within the scope of the invention comprising a variety of natural and/or synthetic materials, most typically polymeric materials. Howland discloses that, for cost considerations, preferred embodiments of his invention utilize fibers and yarns that are not formed of pure "high performance" fibers, such as KEVLARTM para-aramid and VECTRANTM liquid crystal polyesters, having a fiber strength/tenacity of greater than about 15 g/denier. Howland discloses that most preferred, within the context of his invention, are yarns and fabrics containing fibers having a strength/tenacity of between about 3 and about 8 g/denier, which fibers are much less expensive than the above-mentioned high performance fibers, while providing adequate tensile strength to resist penetration when constructed, configured, and treated as described herein below. Howland discloses that in one preferred embodiment, polyamide (nylon) fibers are used for forming puncture-resistant fabric layer 12; and in another preferred embodiment, puncture-resistant fabric layer 12 is formed of one of the commercially available types of polyesters having a fiber tenacity of between about 3 and about 8 g/denier.

Thus, following the overall disclosure of Howland, one having ordinary skill in the art would not have any desirability of performing experimentation pertaining to fibers as recited in Applicants' claims to arrive at the subject matter recited in Applicants' claims. In this regard, following the disclosure of Howland, Applicants submit that one having ordinary skill in the art

would have performed experiments with the commercially available polyesters having a fiber tenacity of between about 3 and about 8 g/denier. Accordingly, multifilament threads of more than 30 polyester/polyarylate filaments as recited in Applicants' claims would not have been arrived at.

Thus, one having ordinary skill in the art would not have arrived at a bicycle tire comprising a carcass; a tread rubber; one reinforcement layer in the tire, the one reinforcement layer containing strength supports comprising multifilament threads of more than 30 polyester/polyarylate filaments and having a fineness of 200 to 950 dtex, the filaments being spun from molten liquid-crystal polymer, arranged between the carcass and the tread rubber and/or between carcass layers below the tread rubber and/or within the tread rubber; and the multifilament threads being present in the one reinforcement layer as threads running parallel to one another and not intersecting with a thread count of 130 to 480 threads per 10 cm.

Regarding Kazusa, Applicants once again note that the Kazusa is prior to the development of Vectran®, and refers to the position of the break-down protection between the carcass layers. Applicants submit that any modification of Kazusa with Howland would involve the preferred embodiment of Howland. Therefore, if for the sake of argument the disclosures of Kazusa and Howland were combined, any such combination would include a layer containing fibers directed to preferred embodiments of Howland.

Therefore, any combination of Kazusa and Howland, would not arrive at a bicycle tire comprising a carcass; a tread rubber; one reinforcement layer in the tire, the one reinforcement layer containing strength supports comprising multifilament threads of more than 30 polyester/polyarylate filaments and having a fineness of 200 to 950 dtex, the filaments being

spun from molten liquid-crystal polymer, arranged between the carcass and the tread rubber and/or between carcass layers below the tread rubber and/or within the tread rubber; and the multifilament threads being present in the one reinforcement layer as threads running parallel to one another and not intersecting with a thread count of 130 to 480 threads per 10 cm.

Miyamoto does not make up for the deficiencies of either of Kazusa or Howland and is, in fact, not utilized in the rejection to try to establish unpatentability of the subject matter of claims 4 and 5. Claims 4 and 5 are rejected merely on assertions of intended use of the tire. Accordingly, if the rejection of claim 1 is maintained, the Examiner is requested to specifically point out using documentary evidence that one having ordinary skill in the art would have arrived at Applicants' recited subject matter from the disclosures of Kazusa and Howland. In particular, the Examiner is requested to specifically establish using documentary evidence that one having ordinary skill in the art would have modified Kazusa in view of Howland taken alone or in view of Miyamoto to arrive at the combination of features recited in Applicants' claims.

Moreover, as noted above, Applicants' claimed combination of features provides surprisingly high puncture resistance with low weight and rolling resistance.

Moreover, the dependent claims are patentable for the reasons set forth above as well as for the combination of features recited in the dependent claims.

Therefore, the rejections of record should be withdrawn for each of the pending claims, and each of the pending claims indicated to be allowable over the prior art of record.

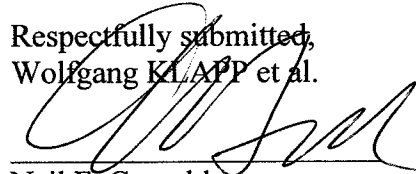
CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims.

Applicants therefore respectfully request that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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